

March 11, 1841.

Sir JOHN WILLIAM LUBBOCK, Bart., V.P. and Treasurer,
in the Chair.

The following papers were read :

1. " On a Cycle of Eighteen Years in the Mean Annual Height of the Barometer in the Climate of London ; and on a Constant Variation of the Barometrical Mean, according to the Moon's Declination." By Luke Howard, Esq., F.R.S.

For obtaining the general results communicated in the present paper, the author has followed the same method as that he had adopted in the two former papers laid before the Society on the connexion of the barometrical variation with the lunar phases and apsides. Tables are given of the barometrical averages on successive solar years, from 1815 to 1832, so constructed as to exhibit the variation of the moon's influence according to her declination ; and also of these averages on successive cycles of nine solar years, classed according to the moon's place in declination, on either side of the equator. The results deduced from these comparisons are, first, that the barometrical mean in this climate is depressed by the moon's declination being to the south of the equator ; and, secondly, that this depression takes place gradually, commencing with the moon's being in full north declination, and proceeding through her remaining positions to the time when she crosses the equator to resume the northern declination ; at which season, the whole pressure that had been withdrawn from the atmosphere is suddenly restored. The author thinks there is evidence of a great tidal wave, or swell in the atmosphere, caused by the moon's attraction, preceding her in her approach to, and following her slowly as she recedes from these latitudes ; so that were the atmosphere a calm fluid ocean of air, of uniform temperature, this tide would be manifested with as great regularity as those of the ocean of waters. But the currents uniformly kept up by the sun's varying influence effectually prevent this from taking place, and involve the problem in complexity. He finds that there is also manifested in the lunar influence a gradation of effect, which operates through a cycle of eighteen years. The mean pressure of the atmosphere during the first part of this period increases ; and then, after preserving for a year its maximum amount, again decreases through the remaining years of the cycle, but exhibits, towards its minimum, some fluctuations before it again regularly increases.

2. " On a remarkable depression of the Barometer in November 1840, agreeing very closely in its movements and results with that of December 1821." By Luke Howard, Esq., F.R.S.

The object of the author in the present paper is to show the close correspondence of the extraordinary depression of the barometer in the months of October and November of last year (1840), and of the remarkably stormy weather which prevailed at the same period,

with similar phenomena occurring in December 1821, when the moon's place in declination underwent the same changes during those two periods, at an interval of nineteen years.

3. "General results of Meteorological Observations at Constantinople." By J. W. Redhouse, Esq. Communicated by John Davy, M.D., F.R.S.

4. "Term-Observations made at Prague in November and December 1840, and January 1841." By C. Kreil. Communicated by S. Hunter Christie, Esq., M.A., Sec. R.S.

March 18, 1841.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

The Right Hon. Thomas Frankland Lewis, and Robert Masters Kerrison, M.D., were balloted for, and severally elected into the Society.

The following Magnetical and Meteorological Observations, taken in conformity with the Report drawn up by the Committee of Physics including Meteorology, for the guidance of the Antarctic Expedition, as also for the various fixed Magnetic Observatories, have been communicated by the Lords Commissioners of the Admiralty, and by the Master-General of the Ordnance, viz.—

1. "Magnetic-term Observations, taken at Kerguelen's Land, for May and June 1840." By Capt. James Clark Ross, R.N., F.R.S., Commander of the Expedition.

2. "Hourly Magnetic Observations taken at Kerguelen's Land, commencing May 25, and ending June 27, 1840." By Capt. James Clark Ross, R.N., F.R.S., &c.

3. "Meteorological Observations taken on board Her Majesty's Ship *Erebus*, for October, November, and December 1839, and from January to August 1840." By Capt. James Clark Ross, R.N., F.R.S., &c.

4. "Meteorological Observations taken on board Her Majesty's Ship *Terror*, for November and December 1839, and from January to July 1840." By Capt. T. B. M. Crozier, R.N.

5. A paper was also in part read, entitled, "On the Localities affected by Hoar-frost, the peculiar currents of Air excited by it, and the Temperature during its occurrence at High and Low Stations." By James Farquharson, LL.D., F.R.S., Minister of the Parish of Alford.